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The Macro-Lepidoptera of Ringwood, in Hampshire. By G. B. CORBIN, Esq.: with a Supplementary Note by the Rev. JOSEPH GREENE, M.A.

RINGWOOD is generally supposed to be a very good locality for Lepidoptera, and of the truthfulness of this assertion some idea might be formed by the observations and remarks given in the appended list, in compiling which I have confined myself to a circuit of twelve miles, which is a reasonable distance for a day's entomological hunt, and before I proceed I hope my more experienced brethren will look with a lenient eye upon this my first production for these pages, and I hope it may lead to something better at a subsequent period. I may here state that I am indebted to the Rev. J. Greene for naming most of my insects. The arrangement is according to Doubleday's 'List,' second edition.

Papilio Machaon. I have heard that this insect was formerly taken near here by my uncle, the late Mr. W. Bentley.

Leucophasia Sinapis and Pieris Cratægi. Both of these insects are to be taken in the Forest, although never taken by myself. Mr. Douglas in the 'World of Insects,' says he found the latter common near some of the young plantations.

Pieris Brassicæ, P. Rapæ, P. Napi, Anthocharis Cardamines and Gonepteryx Rhamni. All these are generally common.

Colias Edusa. This was very common in 1859: I took thirty in about three-quarters of an hour. They have been scarce since.

Argynnis Paphia, A. Aglaja, A. Adippe, A. Euphrosyne and A. Selene. All these are not uncommon in the Forest.

Melitæa Artemis. Common about five miles from here.

M. Athalia. I have heard that this species has been taken on Parley Heath. I have never seen it myself.

Vanessa C-album. This I have seen, but never taken.

V. Urticæ, V. Io and V. Atalanta. Common both before and after hybernation.

V. Polychloros and V. Cardui. Frequently taken after hybernation.

Limenitis Sibylla and Apatura Iris. Have seen both in the Forest, but never took either.

Arge Galathea. Common at a place called Migham, near Fordingbridge; also near Lyndhurst, just within my twelve-mile limit.

Satyrus Ægeria, S. Megæra, S. Semele, S. Janira, S. Tithonus, S.

Hyperanthus, Chortobius Pamphilus, Thecla Rubi, T. Quercus and Polyommatus Phlæas. All these may be taken within six miles.

Lycæna Ægon. Common on the heaths.

L. Agestis. Occasionally.

L. Alexis. Common.

L. Argiolus. Occasionally.

Hesperia Sylvanus and H. Linea. These are the only skippers I have ever met with here.

Smerinthus ocellatus. I have had the ova, larvæ and pupæ of this handsome species, but was never successful in rearing the imago, for which I am unable to give any reason.

S. Populi and S. Tiliæ. These species I frequently rear both from larvæ and pupæ.

Acherontia Atropos and Sphinx Convolvuli. These two species in 1859 were taken I may say in some plenty. I set no less than ten of of the former. In one evening in 1859 a friend of mine took three of the latter. I scarcely knew the worth of such insects at that time, being the first season of my collecting, and since then I have not seen a specimen of either.

S. Ligustri. I have taken the larvæ several times, but like Smerinthus ocellatus I have never reared the imago. I have seen the moth on the wing.

Chærocampa Porcellus. I have heard of its capture near here, but I have doubts as to the truth of it.

C. Elpenor. This species Mr. S. R. Neave found common one evening, I believe, in 1859. He found they had a great partiality for the flowers (or rather the nectar they contained) of a large bush of honeysuckle, and he captured seventeen in half-an-hour; however, they have disappeared since, not a single specimen having been taken. These were taken about five or six miles from Ringwood; they have also been taken within three miles of it.

Macroglossa Stellatarum. I have occasionally taken this species. The Rev. J. Greene found the ova here.

M. fuciformis and M. bombyliformis. I am not sure which of these species (it may be both) Mr. Neave told me had been taken near Fordingbridge.

Sesia tipuliformis. Common in gardens where there is a large number of currant trees. I think this insect is attached to the black currant more than the red; I have bred it from the former.

Zeuzera Æsculi. I should judge this is to be found near here, as I have seen pear and plum trees with the galleries produced by its larva.

Cossus ligniperda. The trees in some parts of Ringwood, particularly oaks (I believe they generally attack willows), are entirely perforated by the destructive larvæ of this odoriferous species, and yet I have never seen the perfect insect. While pupa-digging during the past winter, on the estate of the Earl of Normanton, I tore off a piece of loose bark, and in it were no less than eleven larvæ of this three-year wood-feeder, all about three-quarters of an inch in length. In 1860 I succeeded in getting three larvæ to turn to pupæ, but by some misfortune or other not a perfect insect appeared.

Hepialus hectus. I once found this species very common about three miles from here, but have taken them sparingly since.

H. lupulinus. May frequently be met with.

H. sylvinus. I took a single male in August last.

H. Humuli. Abundant in the meadows.

Procris Statices. Taken sometimes but never very common.

Zygæna Trifolii, Z. Loniceræ and Z. Filipendulæ. These three species are all to be found here, but unlike most localities Z. Filipendulæ is the most uncommon.

Nola cristulalis. Taken once or twice.

Calligenia miniata. Taken both here and at Lyndhurst.

Lithosia mesomella. Sometimes to be taken not uncommon on the heaths of J. T. Turner, Esq., but alas! many uncommon species beside this are lost to me, for new proprietors of land have often a very prejudiced view of entomologists, and fancy they want others beside their "untaxed and undisputed game."

L. complanula, L. griseola, L. stramineola, L. quadra and L. rubricollis. All these I have met with, but far from common. Last July, while sweeping some heath by the side of a wood for the larvæ of A. Myrtilli, I got a moth into my sweeping-net which I believe was L. complana, as the costal stripe was parallel through its entire length. The moth was so mutilated that I did not preserve it.

Eulepia cribrum. I beg a little space for a few remarks on this species, as all know it is very local, not to say rare. I believe it is generally asserted that the insect appears in July, but this only happens in a late season. It is well known that the season of 1860 was extremely backward, and then the insect appeared as late as the 11th of July, my friend Mr. Greene having taken a specimen on that date, while during the season of 1861 I took all my specimens in the first two weeks of June; I did not see the insect in July. I have never taken the female: I believe they are found on most of the New Forest heaths, but they favour particular spots. There is one of these spots on Parley Heath, which seems to be the metropolis for them, although there they are far from common. It is three miles from Ringwood to this heath, and although it extends to within a mile of my home this insect is of rare occurrence near here. I never saw but one instance of their flight in the day time: they generally begin to fly about half-past eight or nine o'clock, and continue on the wing for a short time, not more than an hour. They only appear for about a fortnight, so I must catch them then or not at all. I have seen them at rest on the tops of the heath, but to catch them requires a little care, as they will not fly off, but fall to the ground among the entangled stems; and you stand a good chance of not seeing them a second time, as they have a plan of sliding between the stems with agility, while their elongate form (characteristic of all the family Lithosidæ) greatly facilitates this means of escape. Their flight may be compared to that of the great caddis-fly (*P. grandis*), that is rather jerking, but they sometimes have an hovering flight, something similar to Hepialus hectus. When taken in the net they are to all appearance dead, falling to the bottom. Their flight is not swift, and, as far as my experience goes, they never fly very high. If you touch them with the net they immediately fall, and all chance of recovery is lost.

Euchelia Jacobeæ. This species may be found common in an old gravel pit, where its food-plant (the ragwort) abounds.

Callimorpha dominula and Euthemonia russula. Both these species are not uncommon. The former I often find in the larva-state after hybernation. They both fly in the day time.

Chelonia caja. Common.

C. villica. I bred a pair of this species in 1861 from two larvæ found in April after hybernation. I have frequently taken them on the wing, but always in a mutilated state.

Arctia fuliginosa and A. mendica. May sometimes be taken, but not common.

A. lubricipeda and A. Menthastri. Both these species are sometimes abundant.

Liparis auriflua. Very common.

L. Salicis. The only specimen I have is one Mr. Greene bred from poplar during his stay here.

L. dispar. I never saw the species till I bred some from eggs sent me from Workington, although I have heard of their being found near here. I set several bred specimens at liberty.

Orgyia pudibunda. I remember finding the larvæ of this species quite common once, but most of them died, as then I did not know their food.

O. fascelina. I have found the larvæ of this pretty species twice, and bred the imago once, a female.

O. antiqua. Not uncommon.

Pœcilocampa Populi. Took a single male in 1861 at light. I have been informed by Mr. Wilkinson they are common at light about three miles from here.

Bombyx neustria and B. Quercus. Not uncommon in the larva state.

B. Rubi. I have succeeded in rearing this insect several times. They are common on the heaths.

B. Trifolii. Not common. Found two larvæ and bred them both in 1860.

Odonestis potatoria. Common.

Lasiocampa quercifolia. I found three of these curious-looking larvæ in 1860, and succeeded in rearing them, as the larvæ were very young when found. They fed on hawthorn. I took a poor female example of this species last year, but they appear to be rare.

Saturnia Carpini. Not uncommon on the heaths in the day time, but requires a quick eye and hand for their capture.

Ourapteryx sambucata. This species is something like S. Carpini in its mad gambols. They are not uncommon.

Epione apiciaria. This insect is common in some parts, in others scarce. I have not inserted E. vespertaria, although I have heard it has been taken in the Forest, but my informant was, like myself, a beginner, and I think imaginary forms often fill the heads of such, and if they take any common insect which has any resemblance to a rare one they always say it is the latter. It is a puzzle to many beginners to know these two insects apart, as they look at the colour and not the markings. If found here E. vespertaria is rare; I have never taken it.

Rumia cratægata. Often abundant, sometimes a pest.

Venilia maculata. This pretty little species I have met with very sparingly.

Metrocampa margaritata. I often take this in the neighbourhood of beech and birch trees.

Ellopia fasciaria. Not common.

Eurymene dolobraria. I never saw this insect but once, and then I took a very beautiful male, apparently just emerged from the pupa.

Pericallia syringaria. I have only one reared by Mr. Greene, off lilac, during his visit here.

Selenia illunaria. Abundant in all the lanes.

S. illustraria. I have taken this insect several times; I remember taking it once at sugar.

Odontopera bidentata. I frequently take this on the heath.

Crocallis elinguaria. Not uncommon.

Ennomos tiliaria, E. fuscantaria and E. erosaria. I have only taken one each of these three.

E. angularia. This species I bred from a larva found at Lyndhurst feeding on beech.

Himera pennaria. Although this insect is generally common I have only taken a single male.

Amphydasis prodromaria. I sometimes find the pupæ of this insect at the roots of oak. I have only bred it once.

A. betularia. I have reared this several times from pupæ found at roots of elm.

Hemerophila abruptaria. Taken once.

Cleora lichenaria. I have taken this insect several times, but it always appears to be injured.

Boarmia repandata. Common. This was the first insect I ever took at sugar.

B. rhomboidaria. May be taken occasionally.

Gnophos obscurata. Rare. I have only seen two examples, both being the dark variety.

Pseudoterpna cytisaria. Common on the heaths. It soon fades.

Geometra papilionaria. Rare. I took a single male flying round the trunk of a birch on a moonlight night, in 1861. I have been told this king of the emeralds is very partial to moonlight nights.

Nemoria viridata. This species appears to be very rare here; I have only seen a single specimen.

Iodis lactearia. Common about three miles from here, but unfortunately the beautiful green bloom on the wings fades soon after death.

Hemithea thymiaria. Common.

Ephyra porata, E. punctaria and E. trilinearia. The two former I have taken several times, the latter rarely.

Asthena luteata. Rather scarce.

A. candidata. I have taken this several times.

Acidalia scutulata. I have only taken this species once.

A. promutata. Scarce.

A. remutata. Common.

A. imitaria. Sometimes to be taken.

Timandra amataria. Frequently taken.

Cabera pusaria and C. exanthemaria. Common near a birch wood.

Macaria notata. This rather uncommon insect I have taken several times in different localities.

M. liturata. I have two specimens of this insect: one I took on a heath near here, and the other on a heath near Lyndhurst.

Halia wavaria. Common.

Panagra petraria. I have taken this species several times, but it cannot be called common.

Scodiona belgiaria. This uncommon moth I have taken several times on the heath. The thing which first struck me was the disparity in size of the two sexes, the males being as large again as the females and of a much lighter colour; in fact I did not believe they were the same species at first. The female of S. belgiaria has a striking resemblance to the female of Fidonia atomaria while on the wing. As far as my experience goes the males never fly in the day time, while the females fly in the hottest sunshine, or perhaps this was only caused by my intrusion upon their homes among the heath. The males I have taken on the wing about dusk, and they are very easy to catch.

Selidosema plumaria. This moth is rare here. I have taken males of this species, but never saw a female. The males differ very much in colour, some being very dark smoky brown, others ochreous. I have seen the moth on the wing both in the day time and in the evening.

Fidonia atomaria. Common on the heaths, both night and day.

Fidonia piniaria. This local species is also to be found here. It flies very high, and is therefore difficult to capture. I should think if Apatura Iris is said to have its throne on the top of an oak, F. piniaria may be said to hold sway supreme on the top of the fir. I have watched it for hours taking its trips round its food, and after all was obliged to abandon the pursuit. No person but those who have undergone this disappointment can imagine an entomologist's feelings, to see insects which are his chief desiderata and yet unable to procure them. F. piniaria flies in the day time, the male commonly, the female rarely.

Aspilates strigillaria. I am in the habit of taking this species on the heath of the Earl of Normanton, but not in any plenty. I used to find it common on a heath, but now in that locality there are many boards thrust before your notice at every turn with "Trespassers will be prosecuted with the utmost rigour of the law."

Abraxas grossulariata. Very common here.

Ligdia adustata. Sometimes rather common, at others scarce.

Lomaspilis marginata. Very common on one hedge of sallows.

Hybernia rupicapraria and H. progemmaria. The males of these two species are common, the females I have bred but never taken.

H. aurantiaria. I had a beautiful pair of this moth developed in January last, from larvæ feeding on birch.

Anisopteryx æscularia. This species is not so common here as in some localities. I never caught but one male, but bred several.

Cheimatobia brumata and Oporabia dilutata. Both common.

Larentia didymata. Common where the stinging nettle abounds.

L. multistrigaria. In the spring of 1861 I found this species very abundant on the heaths.

Emmelesia albulata. Not uncommon in the meadows.

Eupithecia venosata. Scarce. I have never taken many. I only met with one during last season.

E. nanata. One spot on the heath seems to swarm with this species.

E. castigata. Not very common.

E. subnotata and E. vulgata. Not uncommon.

E. absynthiata. Last season I bred a large number of this species off the flowers of the ragwort.

E. exiguata. Scarce.

E. rectangulata. Not uncommon.

Lobophora sexalata. Rare, as I believe it is in all other parts of the kingdom. I have only taken two, and these happen to be male and female. It is remarkable that the males have appendages on the hind wings, and when I took it I thought it was a moth with six wings. [Hence the name.—*E. N.*]

Thera variata. This species is very common. They differ very much in size.

Ypsipetes impluviata. Not common.

Y. elutata. Common, often abundant. Among them are some curious varieties.

Melanthia rubiginata. Taken once while beating an oak at Lyndhurst.

M. ocellata. Common.

M. albicillata. I took three of this species in 1861, but they appear to be scarce, as I only saw single specimens.

Melanippe rivata. Scarce.

M. montanata. Not uncommon.

M. galiata. Occasionally.

M. fluctuata. Common.

Anticlea rubidata. I have taken this insect several times, but mostly faded specimens.

A. badiata. I have also taken faded specimens of this species.

Coremia propugnata. Of frequent occurrence.

C. ferrugata. Common in the lanes.

Camptogramma bilineata. Very abundant.

Cidaria miata. Common.

C. picata. Scarce.

C. russata. Common, sometimes abundant. They vary much in colour.

C. suffumata. I have taken this insect several times.

C. testata. Common on the heath.

C. fulvata. Common in the same locality as Hepialus hectus.

C. pyraliata. Not common.

Eubolia cervinaria and E. mensuraria. Not uncommon.

Platypteryx lacertula. I have only taken one specimen of this insect, and that was flying round a sallow.

Cilix spinula. I have taken this curiously-marked species several times.

Dicranura vinula. Sometimes taken, although I have never met with it. I have found the larva.

Pygæra bucephala. Very common in the larva state.

Ptilodontis palpina. I have only taken one specimen of this insect, but Mr. Greene during his visit here bred a pair, and with his accustomed liberality gave them to me.

Notodonta camelina. Of frequent occurrence in one locality.

N. dictæa. Rare. I have taken two at different times.

N. trepida. I have taken both the larva and pupa of this species, but have never reared it.

N. chaonia. I have never seen this insect, but Mr. Greene says "I know the insect occurs at Ringwood, as I found the larva."

N. dodonæa. I found an ichneumoned larva of this species in 1861.

Diloba cæruleocephala. Common in the larva state. The imago is not often seen.

Thyatira derasa. I have sometimes taken this, and once found the larva.

T. batis. I take this and the preceding species at sugar, but not commonly.

Bryophila Perla. Taken occasionally on lichen-covered walls.

Diphthera Orion. This rare species is found in the Forest, but I have never been the lucky captor of a single specimen.

Acronycta Psi. Of frequent occurrence at sugar.

A. megacephala. Not very common.

A. Ligustri. I have only taken one specimen of this insect, and that was at sugar after an extremely wet day.

A. Rumicis. I often find this species very abundant at sugar.

Leucania turca. This species is very local. I remember well my first sugaring with Mr. Greene, at Lyndhurst: we had sugared about fifty trees and searched about twenty without the sign of a moth, but as we proceeded we found L. turca rather common.

L. lithargyria. Not common.

L. impura and L. pallens. Of frequent occurrence, both at sugar and on the wing.

Xylophasia rurea. Not common.

X. lithoxylea and X. polyodon. Common at sugar.

X. hepatica. Rather scarce.

Dipterygia Pinastri. This species is rather common here at sugar; in fact in 1859 it was abundant.

Charæas Graminis. This destructive little insect I have never found common.

Cerigo cytherea. I sometimes capture this insect at sugar, but Mr. Greene informs me it is very partial to light.

Mamestra Brassicæ. Common. My first pupa-digging experience was with this species. I had purchased the little book of Mr. Greene's on the subject, and had read that oaks generally produced good insects, so I went digging, when I saw a large oak full of angles, which is just the sort recommended as prolific, and I went to it in a rather disconcerted mood (being unsuccessful), and inserted the trowel, when, on turning over the sod, I saw pupæ not in pairs but in dozens. I searched the tree, and found ninety-six in all. I took them home and put them very carefully into my breeding cage, and after awhile I was rewarded with M. Brassicæ in plenty. If the digging disconcerted me the rearing did so more, when I saw about twenty of this pest on the glass of my cage; however I let all the pupæ remain in the cage to see if there were any beside M. Brassicæ, and by this means I got two specimens of a moth nearly as common, *viz.*, Hadena oleracea.

M. Persicariæ. I bred a specimen of this insect from a larva feeding on peas. It appears to be scarce about here.

Apamea oculea and Miana strigilis. Both very common at sugar and at privet blossoms.

Caradrina Morpheus. Rather scarce; once at sugar.

C. cubicularis. Not uncommon.

Rusina tenebrosa and Agrotis suffusa. I have taken both these species, the former at sugar and the latter at ivy blossoms, but neither common.

A. Segetum and A. exclamationis. Very abundant in 1860, but not so common last season.

A. nigricans. I took a rather worn specimen flying about some bramble blossoms, about three miles from here, also a very good example on the heath, both in August last.

A. porphyrea. Common on the heath, both at sugar and at the heather blooms.

Triphæna janthina, T. fimbria and T. interjecta. The two first may sometimes be met with at sugar. Of the last I have only taken a single mutilated specimen.

T. subsequa. This is one of the entomological prizes for sugarers and searchers of privet blossoms. Mr. Greene took a pair in 1860, both at the blossoms I believe. Although sugar is very well in its place, yet the blossoms of the privet and ivy surpass the best sugar mixture ever concocted.

T. orbona and T. pronuba. Both common at sugar.

Noctua plecta. Common at sugar and about bramble blossoms.

N. Rubi. I have taken this insect once or twice.

N. umbrosa. Not uncommon.

N. xanthographa. Abundant.

Trachea piniperda. This I have taken but once, though accounted so common an insect.

Tæniocampa gothica, T. instabilis, T. stabilis, T. gracilis and T. cruda. All these moths have a great love for the flowers of the sallow. I have never taken any at sugar. T. gracilis and T. cruda are not common; the others are.

Orthosia Ypsilon. Not common.

O. lota. Of frequent occurrence at the ivy blossoms.

Anchocelis pistacina and Cerastis Vaccinii. Common at the ivy blossoms. Some curious varieties of the latter species may be sometimes obtained.

C. spadicea. Abundant at ivy.

Scopelosoma satellitia. Of frequent occurrence at ivy and sallows.

Dasycampa rubiginea. I took a very good example of this rarity at ivy last October.

Xanthia ferruginea. Not uncommon.

Cosmia trapezina and C. diffinis. These two species may sometimes be met with at sugar, but C. trapezina is much more common than C. diffinis.

C. affinis. Common at sugar.

Dianthœcia capsincola. I have never taken this insect on the wing, but have reared it twice from the seed-vessels of Lychnis.

Epunda viminalis. I have a rubbed specimen, but it is the only one I ever saw.

Miselia Oxyacanthæ. Not uncommon at ivy.

Agriopis aprilina. Never taken on the wing. I found two pupæ in the forest, both of which came to perfection.

Phlogophora meticulosa. Common at sugar and at ivy. I often find the hybernating larvæ of this species in moss during the winter months.

Euplexia lucipara. I have frequently taken this species at sugar and hovering over bramble blossoms.

Hadena oleracea. Common.

H. contigua and H. Genistæ. Not common.

Xylocampa lithoriza. I have taken this species three or four times.

Xylina semibrunnea. Rare; I took a single example at ivy last October.

Cucullia Verbasci. I have bred this insect twice. The larva is very common, feeding on the yellow mullein, but they are so subject to the attacks of ichneumons that out of thirty or forty larvæ I only bred a single moth. It spins a very thick, tough cocoon under ground, and changes to a yellowish pupa, in which state it passes the winter.

Anarta Myrtilli. This is certainly well named the "beautiful yellow underwing," as the combination of colours is truly lovely. This species flies in the day time and only in the hottest sunshine. It is extremely difficult to catch; it will often lead you a great distance, and then by a sudden sort of jerk or darting motion it is lost to your view. I never took more than four. When they are in the net they have the same restless propensity, and will damage themselves considerably even before you secure them. The best plan is to rear them from the larvæ (which like the moth is very beautiful), but get them ever so young they have nearly all been ichneumoned.

Heliodes Arbuti. This minute Noctua was not uncommon in 1859, although not of frequent occurrence since.

Erastria fuscula. This species appears to be rare; I have only taken a single specimen.

Abrostola Urticæ. Not uncommon where the stinging nettle abounds.

A. triplasia. Not common.

Plusia chrysitis and P. Gamma. Common in same locality as Abrostola Urticæ.

Gonoptera Libatrix. Common in the early spring.

Amphipyra pyramidea. May sometimes be taken at sugar, but is not common.

A. Tragopogonis. Common at sugar, but has a remarkable plan of sliding away as soon as the light from the bull's-eye comes upon it.

A. maura. Common at sugar; often abundant.

Catocala nupta. Of frequent occurrence at sugar where willows abound.

Phytometra ænea. I have taken this species once in each year during the three years I have collected on the heath. They fly in the sunshine.

G. B. Corbin.

Ringwood, Hants,
April 1, 1862.

Having written to my much-esteemed friend Mr. Greene he has kindly sent me the following additions to insert on his authority. I will give them in his own words.—*G. B. C.*

Trochilium culiciformis. I saw a beautiful specimen alive of this insect, which had been taken by a young entomologist, Mr. Reginald Frye.

T. apiformis. Larvæ common at roots of poplars.

Ennomos erosaria. Larvæ not uncommon on oaks.

Ephyra poraria and E. pendularia. Larvæ not uncommon on oak and birch.

Eupithecia virgaureata. Larvæ on golden rod.

E. minutata. Larvæ common on heath.

E. pusillata. Eggs on golden rod.

E. abbreviata. Larvæ not uncommon on oak.

E. pumilata. Larvæ on broom, but scarce.

Lobophora viretata. One larva beaten from sloe produced a fine female.

Anaitis plagiata. Common in the larva state feeding on St. John's wort. Thinking it to be in its young state a larva of some Eupithecia, I spent many laborious hours in searching for them.

Clostera reclusa. Larvæ very common on dwarf sallows.

C. curtula. Larvæ scarce on aspen.

Acronycta leporina. One imago on bedroom window.

Triphæna subsequa. The locality in which these were taken is worth noticing. The insect has, I believe, generally been captured in or about the forest. These two, however, were taken on the blossoms of a privet hedge which bordered the high road, and was not more than a hundred yards from the town of Ringwood.

Trachea piniperda. I am surprised that Mr. Corbin should not have met with this insect, as the larva is common enough on firs in the middle and end of July.

Cirrœdia xerampelina. Pupæ at the roots of ash.

Tethea subtusa. Common in the larva state on poplars.

Dianthœcia carpophaga. Larvæ not rare in the seed-vessels of Silene inflata, but difficult to rear. The same remarks apply to D. conspersa.

Hadena protea. Pupæ common at roots of oak.

J. GREENE.

Description of the Larva of Orgyia fascelina.—The eggs are laid in August, on the leaves of Salix fusca, which grows abundantly on the sand-hills at the mouth of the Mersey, and the larvæ are hatched in about twelve days: the young larva eats for a very short time, and then hybernates at the roots of the herbage. In the ensuing April it again commences feeding on the young and tender silken leaves of the sallow. When disturbed it rolls itself into a tight ring with its head on one side, and not brought into contact with the tail; in this position it sometimes falls to the ground, but sometimes also clasps the twig of its food-plant, enclosing it in the ring, and is then difficult to remove without injury. Head prone, rather small, concealed by hair. Body obese, very hairy: the 2nd segment has a pencil of black hairs on each side the head; these are seated in the neck and stretch forward in a spreading manner. The 5th, 6th, 7th, 8th and 9th segments have each a broad thick brush of hairs standing erect on the back; the colour of each of these is intense black in the middle, and dingy white on the sides, so that the larva when at rest in a horizontal position seems to have a black stripe down the middle of the back, and a whitish stripe, rather interrupted, on each side of it: the black stripe is continued on the 10th and 11th segments, and terminates in a fascicle of black hairs on the 12th segment; this fascicle slopes backwards at an obtuse angle, and the hairs composing it are longest in the middle, gradually decreasing in length to the outside. In the very middle of the 10th and 11th segments on the back is a small valvular pore having a mucous surface, and susceptible of being opened or closed at the pleasure of the larva: the function or office of these pores is at present unknown to me, but their presence in other species is observable; their colour is pinkish. The head is black in front and on the crown, but has a red patch on each side: the front or face is rough, but the other parts are brilliantly striking. All parts of the body not occupied by the brushes and fascicles are covered with hairs, which spring from wart-like tubercles, eight of which form a circular series on the 2nd, 3rd and 4th segments respectively; on each of the following, that is, from the 5th to the 9th, both inclusive, three on each side of each segment, below its dorsal brush, which evidently occupies the place of the two that are absent; the 10th and 11th segments have each eight of these hair-bearing tubercles: the hairs springing from them are of two colours, yellow and black: these are intermixed and apparently without order, so that they give the larva a yellow tinge. The skin is intensely velvety black, variegated on the sides with gray markings and on the belly with rivulet orange markings, which form a double stripe the whole length of the larva: the legs are black and shining, the claspers dingy flesh-coloured. I have never met with larvæ more quiet and sedentary than these: like silk-worms, they remained on the food-plant, Salix caprea (the sallow), with which I provided them, and exhibited no disposition whatever to wander. All my specimens were full fed on the 13th of May, and then ascended to the highest accessible part of the breeding-cage, and there, in defiance of the laws of gravity, each spun a large and lax cocoon, through which the enclosed pupa is most distinctly visible: the cocoon is like very thin coarse felt in appearance, and is composed of the hairs of the larva and silk in about equal proportions, the hairs being those composing the dorsal tufts of the larva, and not the hairs scattered over other parts of the body, which still remain attached to the skin shed on assuming the pupa state: the pupa is short, obese and black, with a metallic bronze-like lustre: all the dorsal surface is uniformly covered with long silky brown hairs, but the wing-cases and ventral surface are entirely without hairs. The moths appeared on the 20th of June. I am indebted for a supply of this beautiful species to the unvarying kindness of my friend Mr. Edwin Birchall.—*Edward Newman.*

Captures near Cockermouth.—We have taken a few of each of the following insects:—Notodonta carmelita, Cymatophora flavicornis, C. ridens, Lobophora viretata, L. polycommata, and many other species of less note: the last two species I find to be very local and scarce, especially L. viretata; it is a very pretty insect, and is difficult to see, as it always chooses a tree the bark of which is similar in colour to itself to rest upon.—*George Mawson; Gill House, May* 21, 1862.

Life-Histories of Sawflies. Translated from the Dutch of M. SNELLEN VAN VOLLENHOVEN, by J. W. MAY, Esq.

(Continued from p. 7857.)

NEMATUS VENTRICOSUS, *Klug. Hartig, Aderfl. Deutschl.* i. p. 196, No. 23. *Bouché, Naturgesch. d. Ins.* p. 140, No. 7. *Dahlbom, Clavis novi Hym. Syst.* p. 22, Nos. 18 & 25. *Léon Dufour, in Ann. de la Soc. Entom.*, 2e serie, v. p. 571.

Nematus luteo-flavus, capite, maculis tribus dorsalibus ac duabus pectoralibus nigris, antennis supra, tibiarum apice tarsisque posterioribus fuscis ♀; partium omnium colore obscuriori ♂.

Some years the currant bushes (*Ribes rubrum*) are attacked by little caterpillars, which, from their feeding together in large numbers and being very voracious, soon eat bare whole rows of bushes. I imagine that in years favourable to their development there are three broods; the first imagos appear in the beginning of May, and the larvæ produced from the eggs of these have already undergone their metamorphosis in the beginning of June (see, on this head, the observations of Bouché), so that by the middle of that month a second brood of imagos has appeared. Now, in June, 1840, I found hundreds of larvæ, of which some that I reared produced perfect insects in August; and in the month of September of the year following I found all the currant bushes at Zwammerdam eaten bare, and many larvæ yet on the branches, so that this may have been the third generation. However, I think we must assume that there are generally but two broods in the year,—namely, imagos in May producing larvæ in May and June, these again producing imagos in July, the offspring of which pass the month of August in the larval state, and spin up by September, to pass the winter in the cocoon.

The larva (fig. 1), which is about 16 mm. long, is of a grayish green colour, with paler sides, the first and penultimate and sometimes the terminal segments being yellowish or orange. The head is shining black, with brownish yellow mouth. The whole body is covered with black points, which project more or less, and each bears a single little black hair. These points are arranged in curved rows, the first segment having one, the second two, and the following segments three rows. Besides these at the sides above each leg are one larger and two smaller black shining spots, each spot having little hairs growing on it. The spiracles are white. The larva has twenty legs, so that only the fourth and eleventh segments are apodal; the six thoracic legs are black and green ringed, with brown claws, the abdominal legs pale green, the anal claspers yellow; above these last on each side is a little black spine; I could not discover any trace of the so-called abdominal glands or other secretory apparatus.

These larvæ feed both day and night, and, beginning in company on a leaf, they eat on until there is nothing left but the stalk and some of the thickest veins. Before quitting the bush they moult once more, assuming a pale yellowish green colour, the first and terminal segments being orange, but they are now without the black spots and hairs (fig. 2). After this they drop from the tree and construct a cocoon at the foot: this cocoon is made at no great depth in the ground, and is externally entirely covered with little grains of earth (fig. 3). They assume the pupa state, in the summer, in the space of three weeks, in the winter only after an interval of eight months. The pupæ are yellowish white, and display all the parts of the imago. They very soon change their colour, and in eight or ten days, having moulted for the last time, the perfect insect gnaws open the cocoon.

The imago is from 7 to 8 mm. long, expanding 15 to 16 mm. The female has the head black, the clypeus, labrum, bases of the mandibles and the antennæ dull yellow, the borders of the eyes reddish, which is also the tint of the under side of the antennæ; the back is black with yellow margins, or yellow with three black spots; scutellum red; cichri white; the abdomen is yellow; the ovipositor brown. On the breast are two pretty large shining black spots. The legs are yellow, the ends of the tibiæ and the tarsi of the hind legs are brown or black. Wings translucent, fulvous at the insertion, the nervures and stigma brown (fig. 4).

The following are the distinguishing marks of the male: the antennæ entirely black, the spot on the back never divided, scutellum black, sometimes with one or two brown spots, the basal segments of the abdomen black, and sometimes the coxæ of the last pair of legs also black.

Lastly, among a number of Nematus ventricosus, which I reared all from one brood, I found a female, which, from the description given by Hartig, in the 'Aderflügler Deutschlands,' p. 196, No. 22, appears to be Nematus albipennis, *Klug.*; this specific name would thus have to be dropped. It is of the same size as the type; the antennæ are entirely black, head black, with the labrum, palpi and bases of the jaws yellow; abdomen with five black lines on the upper surface, breast yellow, with the two usual spots; legs fulvous, the last pair with pale brown tarsi; and lastly, the wings have a large yellow stigma, the nervures and insertions of the wings being also of that colour. A fore wing is represented at fig. 6. Although I have observed a great number of these insects escape from the cocoon, I have only once met with this variety, and have never taken it on the wing. The saw of the female of this species greatly resembles that of Nematus cæruleocarpus, which I have already described, but it is somewhat less curved, as represented at fig. 7.

I am acquainted with the following as parasites on the larva of this species, namely, Mesoleptus limitaris, *Grav.*, Tryphon cephalotes, *Grav.*, T. melanoleucus, *Grav.*, T. bipunctatus, *Grav.* Probably all the parasites mentioned by Ratzeburg as having appeared from Nematus Ribesii, *Scop.* (?), will be found to harbour in this species. It is impossible to state with certainty whether Réaumur, in his 'Mémoires,' vol. v. pp. 94 and 125, pl. 10, figs. 4—11, had this or another species in view. Had not Dahlbom stated in his 'Synopsis,' quoted at the head of this paper, that his Grossularia larvæ fed on the leaves of the gooseberry as well as on those of the currant, I should have supposed that this otherwise so accurate naturalist had confused two species together, the more so that I am acquainted with two species of Nematus which have many points of agreement with this N. ventricosus. But Réaumur, in the body of the work, gives his larva twenty-two legs, and in the description of the plates only twenty: this appears to warrant us in supposing that in this matter Réaumur has not gone to work with his usual exactness, which would tend to do away with the interest we might have in determining whether his species was the same as ours.

Léon Dufour has treated of this subject in a paper entitled 'Etudes pour servir à l'Histoire du Nematus Ribis,' published in the 'Annales de la Soc. Ent. de France,' 2me série, tom. v. p. 571 (1847). According to this writer, Dahlbom has made the mistake of stating that the Nematus of Réaumur is identical with his N. Grossulariæ, and was quite inaccurate when he maintained that the writer of the 'Mémoires' had made an error in describing the number of legs.

Although we have no wish to enter into the vexed question about synonymy, which would lead to no result, we cannot help expressing our disapproval of the way in which Léon Dufour has treated the subject, calling his species Ribis, although he himself states that it is not the Tenthredo Ribis of Schrank. This employment of the same specific name can only give rise to confusion. Again, Léon Dufour states, "D'abord la larve du Grossulariæ a vingt pattes, et je ne conteste pas à M. Dahlbom son exactitude numerique; celle du Ribis n'en a que dix-huit," whilst, from what is said at p. 574, it appears that his larva had besides the eighteen legs, "une saillie inférieure du dernier segment de l'abdomen, saillie où se trouve l'anus, et sert, par son épanouissement bilobé, à s'appuyer sur le plan de support, soit pour favoriser la locomotion, soit pour maintenir la larve dans les attitudes souvent grotesques qu'elle prend sur les bordes des feuilles." Now, seeing that every one except Dahlbom counts this "épanouissement bilobé" for a pair of legs, Dufour should have acknowledged that Dahlbom's larva and his had the same number of those appendages. It is also worthy of remark, as at p. 572, that the French author, who appears to read neither German nor English, seems to consider that during the interval of time between Réaumur and himself (1740—1847) nobody has said a word respecting the loss of colour and markings undergone by the larvæ of sawflies at their last change of skin.

On the other hand, I quite agree with Léon Dufour that there is no reason to consider Dahlbom's Nematus grossulariatus as a distinct species from his Grossulariæ. The larvæ of the two species, as well as the perfect insects, were as like as two peas, the only difference being that the first pupized on the branches and made a simple cocoon.

P.S. Since the above was written in the original, the following has been received from the author:—Nematus ventricosus, *Klug*. There was an incredible number of these larvæ in 1860. From observations made by Dr. Witterwaal at Utrecht, and by myself at Leyden, there seems to be no doubt that the first brood in May attacked exclusively the leaves of the gooseberry, some of the bushes being quite stripped, and that the second generation, appearing in July, principally confined itself to the currant, but small numbers having been seen on the gooseberry. I observed this myself in a garden where the two plants were growing intermixed; both larvæ and imagos were decidedly of but one species. From this second brood I reared the parasite Campoplex argentatus, *var.*, and a Tachina.

Notice of two Species of Coleoptera new to Britain.—While working out my specimens of Oxytelus, some time ago, I found a series of specimens agreeing with each other and differing from any species I had seen described; upon the appearance of Dr. Schaum's new edition of his Catalogue, I thought my species would prove to be O. maritimus, as in fact it does. It was taken on the Somersetshire coast under seaweed, and was tolerably abundant. It resembles O. inustus somewhat closely, but is easily distinguished by the testaceous antennæ and the more scattered punctuation. I should also like to call the attention of entomologists to the genus Chalcoides, of which we have at least one more species than is recorded, *viz.* C. Chloris, not uncommon on sallows. It is nearly allied to C. versicolor, but is of an unicolorous green, and has only four joints at the base of the antennæ pale, instead of five, as in C. versicolor. The male also furnishes a decisive character in the shape of the œdeagus, which is never emarginate as in C. versicolor.—*G. R. Crotch; St. John's College, Cambridge, June* 18, 1862.

Capture of Antherophagus silaceus, Herbst, *Agathidium rotundatum*, Gyll., *and other Coleoptera.*—I have much pleasure in recording the addition of Antherophagus silaceus to the list of our indigenous Coleoptera, as it completes the species of that genus at present known on the Continent. The specimen in question was taken by myself some years ago in Oxfordshire. A. silaceus may be distinguished from A. pallens, which it much resembles in size and colour, by the elongate tooth at the apex of the anterior tibiæ, and by its long pubescence. Agathidium rotundatum is most nearly allied to A. mandibulare, but may be known by the greater length of the sutural stria, and by the pale apical joint of the antennæ. Of A. rotundatum I have met with several examples in this neighbourhood. In the course of an excursion which I lately made into Derbyshire, in company with my friend Mr. G. R. Crotch, we were fortunate enough to capture the following rare species, *viz.*:—

Rhizophagus cæruleus. Two specimens.
Agathidium nigripenne. Several.
Clambus nitidus. In abundance.
Paramecosoma bicolor. In abundance.
Orsodacna Cerasi.
Scydmænus elongatulus.
„ scutellaris.
Stenus Guynemeri.
„ tempestivus.
Dianous cærulescens.

—*A. Matthews; Gumley, Market Harborough, June* 15, 1862.

Occurrence of Claviger foveolatus near Blandford.—I have taken Claviger foveolatus, during the past week, in some plenty on a chalk down near Blandford, which gives a new locality for this species, and confirms my previous suspicion that when well searched for, it will be found to have a wider distribution than is at present imagined. I may as well mention here that about three years ago I possessed a male example of Bombyx Mori, which, in the perfect state, retained the larval mask, but, not knowing at the time the rarity of the case (Zool. 7335), I subsequently allowed it to be lost: its sight appeared to be entirely obstructed by the unusual head-covering.— *B. Carrow; Witchampton Rectory, near Wimborne, Dorset, May* 17, 1862.

Occurrence of Pentarthrum Huttoni near Plymouth.—Last summer I purchased, with a lot of garden tools, an old cask, in the staves and hoops of which I had the good fortune to find nine specimens of this remarkable rarity. The cask was put away with fire-wood materials, logs, stumps and fagots of various timber, in an old out-house adjoining a garden attached to the premises formerly occupied by Colonel Pedlar, and situated on the road to Tavistock. It will be remembered by coleopterists that this insect was made known to Science by Mr. T. V. Wollaston, who named it after its captor, the Rev. H. W. Hutton, in the 'Annals and Magazine of Natural History' for August, 1854. After showing it to be new both in genus and species, Mr. Wollaston proceeds to state that four examples were found by the Rev. H. W. Hutton, in November, 1853, "amongst logs of wood recently cut up for burning, and Mr. Hutton states that it was from out of a hard and undecayed portion of cherry-tree (in which their winding burrows were very apparent) that he succeeded in extracting them." I have since had a few specimens sent by Mr. Keys, bookseller, of this town, who accidentally met with them whilst turning over a pile of slates, the frame of one of which broke in his hand and disclosed the insects. The wood in which this insect, in both instances, was found, was birch.—*J. J. Reading; Plymouth, May* 17, 1862.

Acentropus niveus: does it belong to the Lepidoptera or the Phryganeina? *—The ordinal position of Acentropus was brought before the Society by Mr. Brown, in a paper read on the 11th of September, 1857, and the question was then supposed to be settled; yet whenever a naturalist of distinguished ability and repute publishes an error it is astonishing with what pertinacity it sticks. Narycia elegans was removed from the Phryganeina, because, fortunately, it was found to correspond with an insect, under another name, placed among the Lepidoptera. Acentropus still remains to find a position generally acknowledged. Westwood, Dr. Hagen and Zeller may be cited among the principal authorities for including Acentropus with the Lepidoptera. Guenée and Doubleday, we are informed (Preface to 'Zoologist,' 1861), "absolutely and unhesitatingly reject it from that class." In the 'Intelligencer,' last year, there was some discussion, and a proposition was made to place it in the tribe Phryganeina near to the Sericostomidæ. Why it should be rejected from the Lepidoptera, or why it should belong to the Phryganeina, is what we want to know. One argument has been adduced, which is that "the extremity of the abdomen is adorned with quite trichopteriform anal appendages." This is an assertion which may be met by another, namely, that the anal appendages are similar to those of the Lepidoptera, more particularly to some of the Tineina. I think they will compare more favourably with Cheimabacche, or with Tinea, or even with Depressaria, than with any of the Phryganeina. Believing that the anal appendages of the Lepidoptera have not received the attention which they deserve, it may perhaps be excusable here to notice them more than would otherwise be expedient. In size, form and accompaniments they are almost as diversified as in the Phryganeina; and this is the case merely between in widely separated genera, but between closely allied species they sometimes exhibit a very remarkable difference. As an instance, compare the appendages of Triphæna pronuba with those of T. orbona, and it is very probable that where doubts exist as to specific distinction a reference to these characters may solve them. In the Phryganeina the anal appendages are exposed, naked or but slightly clothed with hair, never so as to conceal them; in the Lepidoptera they are usually quite concealed by a clothing of scales and the caudal tuft. It frequently happens that in the death-struggle they are expanded and remain so; this must have been noticed by every possessor of a tolerably good collection, in the genera Mamestra and Hadena especially. When this is the case a fair view is obtained internally, but for careful examination they should be denuded. The anal appendages of Acentropus are clothed with scales as in the Lepidoptera. It may be that they are rather sparingly so, or that they are easily denuded, for I have not had a bred specimen to examine; but the fact is evident. In Acentropus, as was shown by Westwood more than twenty years ago, the wings are clothed with scales, and not only the wings, but the head and palpi, body and legs; the thorax is furnished with a pair of tippets, and the hind wings with a bristle. These three peculiarities, though not possessed by all the Lepidoptera, are characteristic of the order, and none of them are found in any of the Phryganeina. But this is not all: according to Mr. Brown, the pupa is enclosed in a silken cocoon in the axils of the leaves of Potamogeton pectinatus, and with regard to the pupa itself he speaks very positively. "I have proved Acentropus niveus to be a lepidopterous insect," he says; and again, "the pupa-case puts the relationship of the Acentropus beyond a doubt; it is clearly the chrysalis of a moth."—(Zool. 5919). The anomalous characters of Acentropus are presented in its palpi and legs; the latter being destitute of spurs, the former differing in the sexes. In the male one pair of palpi are very conspicuous; in the female two pairs are distinguishable, both rudimentary, but one much larger than the other. I will not venture to say in either sex which are maxillary and which are labial, though it is an important point; yet to judge from these organs alone, the insect should belong to the Lepidoptera, for they are thickly clothed with scales, thus agreeing with that order only, and in other respects are totally different from the palpi of the Phryganeina. I come now to speak, though with more diffidence, of its relative position in the Lepidoptera. Mr. Brown presumes its location will be immediately after the genus Hydrocampa; Zeller, according to Dr. Hagen, includes it in the Crambidæ. Now these families are remarkable for the narrow and elongate abdomen of the males; that of Acentropus appears to me more to accord in character with Cheimabacche fagella; the thorax, in the manner of its clothing and tippets, is similar to Epigraphia avellanella; the form of the wings in the male resembles Exapate gelatella, and the veining makes as near an approach to this insect as E. gelatella does to Dasystoma salicella. These characters, then, together with the form of its anal appendages are suggestive of some degree of relationship here.—*Benjamin Cooke.*

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* Read before the Northern Entomological Society.

Insect Transformations: the Dragonfly.—I have lately been interested in the manner in which the dragonfly enters on its winged life, and I have pleasure in sending you a few notes that may not be unwelcome to your readers. My observations have as yet been confined to a single species, Agrion Puella. The larvæ of this, as of other dragonflies, subsist in their subaqueous life on various animal substances, and are veritable little tyrants of the water. In June, or even earlier, they feel their change approach, and pass into the nympha state, which differs from their previous condition in the increasing transparency of the insect and a certain glow of colour that tells so plainly that a further change is at hand. You will need to be an early riser to see the imago emerge. The transformation begins soon after six o'clock. The pupa may then be seen to creep stealthily up the stem of rush or sedge, and, having found a suitable resting-place, it hooks itself fast by its feet, imbedding most firmly its hinder feet in the stem. Here it remains for some minutes, till its case has become perfectly dry. Then the evolutions begin: first there is a cracking of the case above the eyes, and the large lustrous eyes appear; next the part immediately above the rudimentary wing-case cracks, and the crack speedily extends itself towards the head. The head is first liberated, next the thorax is evolved, but lest the helpless creature should overbalance itself, and thus interfere with the delicate evolution of the legs, Nature has provided it with four extremely elastic belts, two being attached behind the neck and two to the region of the thorax: these serve as suspensory bands to support it while disengaging its legs. It then seems exhausted with its efforts, and rests in order to allow the parts already evolved to dry. This done, and the legs having assumed firmness, it clings again to the reed, and very gradually draws forth its body, arching itself so as not to touch the wings, which are limp and tenderly pliable. The wings very slowly and gradually assume their full dimensions, becoming more and more gauze-like as they are developed; the body becomes longer, and in the course of an hour or so the dragonfly rises on its wings and soars away. I brought in several of the pupæ in my botany-case imbedded in

Sphagnum moss, and thus succeeded in retarding their transformation till I had an opportunity of witnessing at my leisure and with a powerful lens the exit of the imago. The pupæ, if put into a basin, and supplied with reeds, will creep up the stems and undergo their change in a room quite as effectually as in the open air.—*—Peter Inchbald; Storthes Hall, near Huddersfield, June* 18, 1862.

Caaing Whales in the Humber.—During the past week an extraordinary number of caaing whales (*Phocæna melas*) have visited our river; between forty and fifty, having run into shallow water on the Whitton Sands, were left dry on the tide falling. These were soon observed by the people on shore, who, aided by some sloopmen, soon put off with spades, handspikes and other weapons, and despatched the entire shoal. I saw three of them which a sloopman had towed behind his vessel, and which at the time of my visit were laid on the mud previously to flensing for the blubber. They were apparently from fifteen to twenty feet long, and agreed very well with the description and figure given in Bell's 'British Quadrupeds.' A similar shoal went on shore at Cleethorps, near the mouth of the Humber, and the whole were also captured. Although this visitation cannot be compared in point of magnitude with the wonderful shoals which visit the Orkneys and Iceland, still the occurrence so far south struck me as worthy of being recorded. I may mention that in recording the capture the local newspapers mention them as grampusses, and again as bottle-noses, but I feel sure they must be referred to Phocæna melas.—*G. Norman; Hull, June* 14, 1862.

Poisoned Grain and Destruction of Small Birds.—Mr. W. H. Duignan, of Rushall, near Walsall, writes:—"I have, or rather had, a rookery adjoining my house, which I established three years ago, and in the welfare of which I took the greatest interest; in fact I loved the rooks like my own children, and fed and protected them. Yesterday evening my servants observed them falling as if shot, and in the course of an hour the field was strewed with their dead bodies. On my return home I examined them, and found their bills and craws filled with poisoned wheat. The destruction is still going on, and nearly the whole of the old birds are dead, leaving their young ones clamouring and starving in the trees. In the course of another day I think there will not be a single bird, young or old, left alive. Mine is not an isolated case: I know several other rookeries which have been devastated by the same cause, and on one estate all the feathered game was destroyed." Another friend writes as follows:—"The effect of the universal tendency to destroy small birds will be yearly more disastrous, unless active measures are taken to check the evil. At present these useful, nay indispensable creatures are at the mercy of every heartless and ignorant vagabond, and even of the half-educated. Men shoot them, entrap them and poison them; boys are allowed by their parents to rob their nests, and thus destroy what, in the great scheme of Nature, is of more value than themselves. In my own neighbourhood, where insects of the most pernicious kinds were never more abundant, a lady has this spring (1862) poisoned, with strychnine, at one dressing of her grounds or gardens, no less than eight hundred birds of various kinds; and she was a few days since preparing for a second *battue*." The annexed is a *verbatim* copy of measures which are being adopted throughout France, not only by the authorities, but likewise by the chief landowners, to prevent the destruction of small birds. An association formed for that purpose at St. Cesaire, in the Charente-Inférieur, has adopted the following resolutions:—" '1. None of us, during the year 1862, will either seek to discover birds' nests or to destroy the young birds, in whatever place soever they may be, and under no matter what pretext. 2. None of us will pursue any birds after quitting their nests. 3. The nests of sparrows, chaffinches and linnets may alone be destroyed, these birds being considered mischievous.' It was M. Renon, the parish schoolmaster at St. Cesaire, who drew up these resolutions for his pupils; but it is expected that on consideration he will strike out the third resolution, which declares war against sparrows, chaffinches and linnets, as it is very well known to farmers that they do more service to the crops by destroying the worms than they do injury to fruit trees." I am glad to see that since my first article on this subject appeared in the 'Zoologist' many more have found their way into various leading country journals, and now scarcely a week passes without some interesting statistics appearing. This is what I and all lovers of our feathered races have longed to see. I hope the time is near when these persecuted ones (Nature's intended helpmates) will come and go, and that those who now persecute them will be convinced of their sad mistake, and allow them to rest unmolested. A country walk would then be as in times long past. In the 'Cornhill Magazine' for this month (June) is an interesting article on this subject, and by a long series of useful observations the imputations under which many birds laboured have been entirely disproved, and in many cases a bird which was systematically persecuted and killed by the farmers has been shown to be a positive friend to its ignorant murderer; such birds, for instance, as the rook and crow have been proved to confer immense benefits on the agriculturist, by devouring the subterranean larvæ which stealthily consume the roots of the various crops, and are all the more formidable from the invisible nature of their assaults. The woodpecker, fiercely execrated as a destroyer of trees, has been proved a right good friend to landowners, feeding itself on minute insects that burrow into the bark or decaying wood, and never chipping out its curious tunnel except in a spot where corruption is begun, and is the sure precursor of death. — *S. P. Saville; Dover House, Cambridge, June* 13, 1862.

Protection of Small Birds.—Feeling greatly interested in the preservation of our little birds, and having had occasion some time since to record an instance of their wholesale and indiscriminate slaughter on a property in this neighbourhood, it is with much satisfaction that I observe, in an extract from the 'Norfolk Chronicle' at Zool. 8027, some deservedly severe strictures on the insane practice among agriculturists of poisoning wheat, or rather small birds, and the forcible appeal therein made to their reasoning powers, which it is to be hoped may have the desired effect, or at least make some impression, though long-rooted prejudices are not removed in a day: however the article referred to will now have the advantage of a wider circulation. A few pages further on the arrival and immediate destruction of that most harmless and interesting of migratory birds the hoopoe is announced. Who will venture to say that hoopoes might not breed if allowed to do so? but if not paired ere arrival there is small chance of their becoming so after. They have generally met with a warm reception in this neighbourhood too, where I have known them to be shot for well-nigh fifty years. What number may be shot annually throughout the country it is impossible to say, as probably not half are recorded. I would recommend to all birdstuffers and ornithologists the reperusal of the remarks and suggestions on the subject contained in the fifteenth volume of the 'Zoologist,' for unless about to publish a 'History of British Birds,' of which we have enough and to spare, their time would be better employed in studying the habits than in shooting and skinning birds. Had the hoopoe, for instance, been spared, the reason of the raising and depression of the crest might have been more satisfactorily ascertained or accounted for. And, moreover, we should have heard something of its graceful manner of perambulating lawn or gravel-walks, its mode of feeding, buoyant flight, &c.; and had it been duly encouraged or protected, possibly its sonorous "hoopoes" might have attracted its partner; and had nidification ensued, what opportunities then for observation and remark!—*Henry Hadfield; Ventnor, Isle of Wight, June* 6, 1862.

Occurrence of the Honey Buzzard in Cambridgeshire.—A fine example of this rare species was sent me by a gamekeeper, who shot it near Newmarket, Cambridgeshire, on Thursday, the 30th of May, 1862. This noble bird had been observed for some time prior to its capture haunting the neighbourhood, and was thought by the rustics to be an eagle. The gamekeeper informed me that it had created quite a wonderment, the old women declaring that all their fowls, young ducks and goslings would soon vanish. From the appearance of the tail and other portions of its plumage I have not the slightest doubt that it had a nest, or was busily engaged in labours of incubation. I carefully dissected its craw, and found it contained various limbs and heads of the humble bee (*Bombus lapidarius*), the common lichen, several elytra of a metallic-coloured Coleopteron (these were too far decomposed for me to clearly determine their species), and one small flint. The humble bee appeared to constitute the chief part of its food, at any rate of that day. The bird is a female.—*S. P. Saville; June* 12, 1862.

The Nightingale and its Nest and Song.—The Rev. A. C. Smith has given a graphic account of the ideas of five of our ancient poets on the nest and song of the nightingale; but to my mind the notion that this bird has always a thorn in the interior of the nest is only a vulgar error: nightingales build their nests generally very near the ground, among thorns, brambles and long grass, and their nests a little resemble those of the whitethroat, which arrives in England about the same time as its congener in the way of migration. The idea of the nightingale's singing with its breast against a thorn seems quite a contradiction of my own observations, as I have generally found the majority of these birds, when in full song, in the lower part of a nice bushy-headed oak pollard tree, in nut-bushes, at the corner of underwoods or coppices, and often in thick hedges without thorns. The nightingale, from its many plaintive and minor notes, is called by the poet,—

> "Our mournful Philomel, that rarest tuner;
> Henceforth in April I shall wake the sooner,
> And to her shall complain from the thick cover,
> Redoubling every strain over and over."

Mr. Smith is of opinion, with many others, that we have two distinct species of nightingales, one smaller and darker in colour than the other. I have on a former occasion mentioned the great difference of their song in the day-time and at night; this does not bear a comparison; and as to the darker colour, birds of three or four years old are always different from those of a year or two. I will instance the plumage of a fine old cock chaffinch with his vermilion breast, and as the Latins say, "Magna componere parvis," a very old hen pheasant, which generally partially assumes the plumage of the cock of that species; lastly, to descend to the bullfinch, which so often turns nearly black in the course of four or five years, even not in a state of confinement. To illustrate "vulgar errors" more strongly; about thirty years ago an acquaintance of mine, aged fifty, addressed me as follows:—"I believe you have studied the history of birds a good deal." My reply was that I had. "We have a small bet depending on a question I mean to put to you: pray is not the wren the real hen of the cock robin?" I told him that the nests of the robin and the wren were made quite differently, and that the birds were of perfectly distinct species. Now the gentleman I allude to was a most intelligent and well-read man in every thing except Natural History, but he had lived in a large city all his life, and was editor of a newspaper. No doubt this gentleman recollected the old hackneyed rhyme of his boyhood,—

> "The robin and the wren
> Are God Almighty's cock and hen."

Mr. Smith describes a persevering tradesman who has the talent to make artificial food for nightingales, and to keep them alive for a year or two in full song: this man deserves great credit, as I am certain that unceasing attention and great care are required to keep alive, even for six or eight months, such delicate birds as the nightingale and blackcap. Mr. Smith has mentioned one favourable circumstance, that in the county of Wilts our sweet songsters are on the increase: this, I presume, is a good way from "the busy haunts of men," small towns or large and populous villages and hamlets, for I find in the latter the bird-catchers are always on the alert, and we in Gloucestershire may cry out with truth,—

> "Hail, beauteous stranger of the grove!
> Thou messenger of spring."

The readers of the 'Zoologist' have most likely read the account of an extraordinary appearance of nightingales near Manchester: this, if true, is very uncommon. A neighbour told me he had heard a nightingale in a certain hedge-row studded with young trees: on going to the spot one morning a charming blackcap (*Motacilla atricapilla*) began to pour out his mellifluous notes; my friend instantly exclaimed, "Is not that a nightingale? that is the bird I mean." The poet Milton exclaims,—

> "O nightingale! that on yon bloomy spray
> Warblest at eve, when all the woods are still."

Milton's notice of the stillness of the woods shows he had a good ear for the music of birds, especially those "liquid notes that close the eye of day."—*H. W. Newman; Hillside, Cheltenham, June* 5, 1862.

Another Shore Lark in Norfolk.—In two recent numbers of the 'Zoologist' (Zool. 7845, 7931) I recorded the unusual appearance of shore larks on our Norfolk coast, in November, 1861, and again in January, of the present year. I have now to add a notice of a sixth specimen, also shot at Yarmouth, about the 25th of April. This bird, which I was fortunate enough to procure, had been sent up to a bird-stuffer in Norwich, with several common species, such as sky larks, wagtails, &c., and being looked upon by the man who shot them as all of equal value, he unfortunately did not enter into any particulars, as to the exact spot, &c., where the shore lark was killed.

This bird, singularly enough, like all the preceding ones, proved to be a male. The plumage, as might be supposed from the time of year, was well advanced towards the full nuptial dress, the gorget on the throat and the patches on the cheeks being large and pure black, and the yellow portions very bright. The band across the upper part of the head was, however, still incomplete, the tips of the feathers being edged with brownish white; the rest of the plumage very perfect. It is not improbable that this bird was a remnant of the ill-fated little flock which passed, on their way southward, down our eastern coast, and possibly reached Brighton, where two are recorded to have been taken alive during the last winter.—*H. Stevenson; Norwich, May* 22, 1862.

Curious Variety? of the Chaffinch's Egg.—Can any of the readers of the 'Zoologist,' give me any information respecting a rather curious circumstance which has come under my observation. Whilst rambling in a sequestered wood in the neighbourhood of Bolton Hall, I happened to observe a chaffinch sitting on her nest. On my approach the bird flew off. Having looked into the nest, my attention was immediately attracted by the appearance of the eggs, five in number, which were exactly like those of the redstart, being of the same shape, size and colour, and bearing not the slightest resemblance to any varieties of the chaffinch which I have ever seen. The nest was that of a chaffinch, placed about ten feet up a plane tree, and during the time I was there both the male and female birds manifested great anxiety. I should be glad to know whether such varieties of the chaffinch are of common occurrence.—*C. Danford; Harmby House, May* 20, 1862.

Note on the Great Black Woodpecker breeding in the New Forest.—I was wandering about the forest last Monday evening (June 9th), picking up whatever came across my path in the way of insects, when, on passing an old (though rather small) oak tree, flash went a large black bird from out of a hole in the trunk, about nine feet up the tree. I thought I perceived some red about its head; and there was no doubt of its being a Picus, their flight is so peculiar to them. Visions of the great black woodpecker stole over me; but no, I must be mistaken, one is so apt to fancy every bird or insect one sees to be something very rare, or even a nondescript. However, it made such an impression on me that I thought I would just wait awhile and see if the bird came back again. So down I sat a few yards from the tree, under cover of a friendly bush, and waited—dear me, it seemed an age. An hour gone and no bird. I suppose I must be mistaken, and will see if there are any eggs in the hole. I make a movement to get up, when plump pitches the bird about a yard below the hole; and there, before my eyes, and within ten yards of me, was the first black woodpecker I had ever seen alive,—a fine fellow indeed, and his head, didn't it shine! There was no mistake this time. But what should I do? I must have the bird: if there are eggs, and I do not get the bird too, there are many who will doubt it; but why, said I to myself? "Oh," I thought a voice in my ear said, "you are a collector, a dealer. They won't believe a dealer! You must be a great rogue if you collect for sale; every collector is. Have there not been some one or two or more found out to be rogues? and don't you remember the fable of the robin and sparrow?" But while I sat and stared, and thought how best I could catch my black friend, he had concluded all was right, and had stole into his hole in the tree again, as though he rather thought I was lurking somewhere near. Now for you, thought I. I had my insect net with me (and have done service with it in the way of catching birds in their nests), so, after waiting sufficient time (as I thought) to quiet all fears on the part of my intended victim, I rose to catch him, trembling as though I had the ague. Ah! that did it. All quiet, and I within a yard of the hole. A flutter and out he goes. It is no use. I must try again. So I waited, watched, and cursed my own folly in being so awkward; but to no purpose: he returned no more. There being several men working about the wood, I was afraid to leave it and try again on the morrow; so I set to work and cut the hole larger, which I very soon accomplished, and had the pleasure of bringing out four beautiful white eggs. Two of them are quite clear, and appear to be addled; the others appeared to have been sat upon for about a week. They were laid upon a few chips and dust, the same as the rest of the woodpeckers. The hole went into the tree for about five or six inches, and thence down to about a foot or not quite so much. The eggs are shaped more like the spotted woodpecker's than those of the green woodpecker, but come off to a finer point than either; in fact they are almost as large and about the same shape as snipe's eggs, and are of course pure white. I cannot give the exact measurements just now, but will do so shortly. I have not yet blown them, as I wish to show them to Mr. Wise first (I expect him here in a day or two), so as to remove, if possible, all doubts as to their authenticity. This, I believe, is the first known instance of the black woodpecker breeding in England.—*W. Farren; Brockenhurst, Hants, June* 13, 1862.

Occurrence of Sclavonian and Eared Grebes in Norfolk in full Summer Plumage.—On the 16th of April three beautiful specimens of the Sclavonian grebe (*Podiceps cornutus*) were killed at the same time on one of our smaller broads. I had fortunately the opportunity of examining them all in the flesh, and found them, by dissection, to be an old male, and a young male and female about the same age. The first, a magnificent bird, with a rich crest of black and orange, resembles exactly the bird figured by Yarrell, from a specimen formerly in his collection, also killed on one of our Norfolk broads, in May, 1826. The colour of the two younger birds are less vivid, and the crests much smaller, with a few white feathers still visible on the chin and throat, being apparently birds of the previous season. In the old male, evidently in full breeding vigour, the testes were large and pure white, the same parts in the immature male being smaller and dark in colour. The female contained a large cluster of eggs, but none larger than good sized pins' heads. On examining the contents of their stomachs, I found them in each instance crammed with a compact green mass, which, on close inspection, proved to be nothing but feathers, mixed with and stained by the green Conferva from the surface of the water, the only atom of real food discoverable being a small brown beetle in the stomach of the female. The fact of the grebes thus swallowing their own feathers has been alluded to by Yarrell, Macgillivray, Fleming, and other naturalists; but no satisfactory opinion has, I believe, been arrived at, either as to the cause of their doing so, or the means of disposing of such indigestible materials. As I before observed, with the exception of one minute beetle, I found nothing whatever capable of sustaining life, although the stomachs were in each case greatly distended, the contents being closely matted together and at least half-an-inch in diameter. The stomach of the old male was extremely muscular, indeed a true gizzard, the inner surface rough like a file, and the coats extremely thick. The same parts in the younger birds were also, though in a less degree, indicative of strong digestive powers. Two pairs of the eared grebe, also in full summer plumage, were killed on Horsey Mere, about the 9th of May. One of the females is said to have contained a quantity of eggs. Mr. F. Harmer, of Great Yarmouth, who had heard the particulars from a friend who was present when they were killed, says ('Field,' May 31st), "Two were shot at the first discharge, one soon afterwards, the fourth four days later. When first shot at, they were diving amongst a small patch of weeds and water lilies, not far from the shore; the fourth bird was shot quite out in the open water, at the other end of the mere. The man who shot them said he could get as near them as he wished,—in fact, quite close to them A fifth specimen, an adult male, equally rich in plumage, was obtained near Yarmouth, on the 28th (I believe on Rollesby Broad), and this bird, which was sent up to Norwich to be stuffed, I saw in the flesh, and had the chance of comparing the contents and character of its stomach with that of the Sclavonian grebes. Besides being far less stout and muscular, I found the stomach of this species differing greatly in the smoothness of its interior surface, the almost file-like roughness observable in that portion of the Sclavonian grebe being wholly wanting. The same peculiar habit of swallowing feathers was also plainly discernible in this species; but in this instance these formed only a small portion of the stomach's contents, the great mass consisting of the half-digested fragments of insect-food. Two or three entire feathers were stained brown by contact with the actual food, and many remnants of others, at first sight having exactly the appearance of hairs, were blended with the mass: the appearance of these portions of feathers, thus operated upon by the action of the stomach, would seem to imply that, however innutritious, they are eventually disposed of, through a digestive process. A careful examination of the various fragments of insect-food, consisting mainly of the elytra or wing-cases of Coleoptera, resulted in the identification of claws and scales from the back of the larva of a Dytiscus, or great water-beetle; several bodies of some smaller species, probably Noterus sparsus, found abundantly in the marshes and stagnant waters; two or three bright metallic-green Coleopterous wing-cases, from a species of Donacia, generally found on aquatic plants; and heads of both species of the water-boatmen (*Notonecta*), besides also a minute fragment of bone, probably swallowed unintentionally with other portions of food.—*H. Stevenson.*

Note on the Spotted Redshank, Caspian Tern, Spoonbill, &c., at Yarmouth.—The following birds have been killed on Breydon during the early part of this month on their spring migration. A fine pair of spotted redshanks, male and female, in nearly full summer plumage, a spoonbill, male, and a Caspian tern, also an adult male, several greenshanks, turnstones, and a Temminck's stint, were killed about the same time, and two adult females of Montagu's harrier, in different parts of the county.—*Id.*

Occurrence of Sabine's Gull in Dublin Bay.—In the latter end of last November, I shot an immature example of this gull. I had just killed a blackheaded gull from the coast, when this bird came and hovered over the dead bird. It seemed quite devoid of fear, for, though taking feathers from it with the first shot, it still continued over the dead gull, till I killed it with the second barrel. There was a strong easterly gale blowing at the time, which prevented me from reaching it with a boat for some time, by which the waves had done their work, injuring the head and neck considerably. I have been trying since to find out its name, but without success, till the other day, when turning over Thompson's 'Birds of Ireland' for distinctions between the blackheaded and laughing gulls, I saw, contrary to the usual tenour of the work, a full description of an immature bird of this species, corresponding in all points but two with my bird. The breast of mine is white, not ash-coloured; the sixth primary, which is subject to variation, is dark on the outer web, except the tip, which is white to the depth of three lines; there is also on this web a small oval spot three-quarters of an inch from the tip; the greater web white, a dark semilunar spot resting against the shaft, four and a half lines from tip; half an inch below this spot a continuation of black extends for thirty-nine lines down the shaft. Thompson records four Irish captures, the first and third in Belfast Lough, the second and fourth in Dublin Bay. These occurred before December, 1838: no others were recorded up to 1850. The same author mentions two English captures up to 1845,—one in Milford Haven, another in Cambridgeshire.—*H. Blake-Knox; Bartragh, Dalkey, Co. Dublin.*

On the Opportunities of advancing Science enjoyed by the Mercantile Marine. By C. Collingwood, Esq., M.B., F.L.S., &c.*

At a late meeting of the British Association the importance of the vast trade of Liverpool, in its bearing upon the arts and sciences, was recognized by the appointment of a committee to draw up statistics of the vegetable, animal and mineral products brought annually by the immense mercantile marine of that great port. The productions of Nature, collected from every part of the world, as *profitable cargo*, for the purpose of being used in the arts and manufactures, were the subject of that report; and, indeed, to no one spot in the civilized world are brought such a vast variety of substances—raw material and worked fabrics—as to Liverpool. The mercantile marine of the port of Liverpool, engaged in foreign and colonial trade—amounting to 4500 sail, measuring 2½ millions of tons, and employing many thousands of men—exhibits an amount of enterprise such as probably no other age, and no other place, has ever before shown. The whole globe is scoured by these men and ships in search of whatever may conduce to civilization, and to the wealth of the country which is the centre of this vast and important combination.

The following table shows the number of ships making Liverpool from foreign ports in a given year:—

Official Return of Foreign and Colonial Trade for 1857.†

	Vessels.		Vessels.
From the United States	934	From East Indies, Hong Kong and Australia	331
(Averaging more than 1000 tons each.)			
From British America	493	„ China (exclusive of Hong Kong)	17
„ Central and S. America	505		

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[*] Read before Section D of the British Association, at Manchester, 1861. Communicated by the Author.

[†] Baines' 'Liverpool,' 1860.

	Vessels.
From France	317
„ Spain	295
„ Portugal	169
„ Italian States	174
„ Belgium	123
„ Holland	116
„ Germany	101
„ Turkey	101
„ Egypt	98
„ Cuba, and foreign West Indies	96
„ Prussia	75
„ Denmark	74
„ West Coast of Africa—Foreign ports	74
„ Ditto, British possessions	37
„ North Ports of Russia	71
From South Ports of Russia	31
„ Channel Islands	36
„ Norway	13
„ Wallachia and Moldavia	13
„ Syria	13
„ Fernando Po	3
„ Ionian Islands	11
„ Gibraltar and Malta	10
„ Philippine Islands	11
„ Morocco	10
„ Sweden	7
„ Java	2
„ Greece	7
„ Tunis	1
„ Burman Empire	1
Total...	4528

The above, it must be borne in mind, represents only the ships *arriving at* a single port in a given year, and the numbers are annually increasing.

Nor is the port of Liverpool, although the largest, representing one-third of the commerce of England, the only one to which similar remarks are applicable; and it therefore becomes a question worthy of consideration, How is it that such a vast staff of enterprising men, constantly sailing to all parts of the globe, do so little to add to our knowledge of the natural productions which they, of all men, are in the very best position to explore, and best able to provide for the investigations of scientific naturalists at home? Why do these men, confining their attention to the immediately useful results of the trade in which they are engaged, altogether pass by natural objects, the collection and contemplation of which could not fail to be a source of interest, and which, to men with a moderate degree of education, would, it might be imagined, afford the stimulus of a rational pride?

One thing is certain, viz., that no accessions of importance are derived to our museums and collections from the labours of seafaring men. A piece of coral, a parrot, a shell or two, or something which has received attention from its oddity, is occasionally brought by the sailor from the rich and interesting regions which he has visited; but, as a general rule, anything of value or importance is not even to be looked for. No system of any kind marks the seaman's gatherings, and when they have been distributed among his friends and patrons in England, the contents are generally regarded as lumber, and after remaining for a time where they were first placed, they are laid aside or thrown away to make room for something more useful. It is this utter want of system, this absence of rudimentary information, which renders the ordinary collections of seamen so entirely valueless.

There are, however, a few, a very few, honourable exceptions, in men whose intelligence leads them to see the value of the opportunities they enjoy, and to make use of them, as far as in them lies, for the improvement and advancement of knowledge. The interest of the objects brought home by them can only be appreciated by those who are so fortunate as to have them brought under their immediate attention, and is a strong stimulus to the natural desire for further and more abundant accessions. The willingness of these gentlemen to render their assistance in any direction in which their scientific friends ashore point out that they can be useful, only serves to place in the strongest possible light the immense value which would accrue to Science were a large body of such men, instead of only one or two, constantly employing themselves in a similar manner. We cannot expect all captains of vessels, or indeed perhaps any, to use in this direction the intelligence of a Darwin or a Huxley; but it is not, perhaps, too much to look for that they should exercise a moderate degree of interest in the acquisition of rudimentary information, and a certain amount of capacity in the selection and collection of the multifarious objects which daily come under their notice.

The difficulties which are uniformly brought forward against the idea of seamen turning their attention to Natural History are chiefly on the score of want of time to attend to anything except their own immediate business. But those who are best competent to judge give a different account. They tell us, indeed, that the seaman, during his passage through subordinate grades, has his hands full, and his attention entirely occupied by his ship duties; but when he is entrusted with a command the case is different: he is no longer a servant on board his vessel, but a master; his life of active employment is changed for one of comparative idleness; and it is well if the time thus left on his hands is not put to an evil use. Sailors have not the advantages which the mechanic enjoys upon shore; none of the ordinary rational modes of spending his hours of leisure are open to him; he is dependent upon himself for amusement, and this is more particularly the case with the captain. How often, unfortunately, do we hear of captains of merchant vessels being charged with intemperance, cruelty, and the long train of evils resulting from an unoccupied mind, and the absence of sufficient employment for the mental and bodily energies. The ship is not always in a gale: she does not always require the close supervision which is doubtless often necessary. There are numerous seasons of repose, and ample time which might be employed in the pursuit of those rational amusements or studies which would yield a vast benefit to Science. This is an important point, and one on which I should speak with diffidence, were I not assured by men of the most practical knowledge, and in command of the most important vessels, that there are abundant opportunities for such investigations; whereas the time which might be so employed is too often consumed, for want of such resources, in idleness at sea and intoxication ashore.

Again, a captain naturally feels that should he devote attention to Natural History, he might lay himself open to the charge of neglecting his ship's duties. His owner might possibly be narrow-minded enough to condemn him for allowing anything to occupy his mind beyond the routine of ship-work; or he might even be short-sighted enough to imagine that a man with an object in his moments of leisure is less fitted to occupy a position of trust than a mere machine, who has no idea beyond the mechanical duties of his profession. And not without reason is this fear, — a fear which I know weighs considerably with conscientious captains, who would, if they received the sanction of their owners, do great service to Science, without abating one jot of their vigilance in their primary duties.

The main point, then, to be considered is, how shipowners generally can be induced to sanction in their captains the cultivation of those tastes which they often possess, and which cannot but have a beneficial influence upon their character; and to encourage the improvement of those opportunities which they so abundantly enjoy. This is the great desideratum, and until this is done no great good can be effected. The merchant captain of intelligence must know that his attention to Natural History, or any other branch of Science, not immediately connected with his ship's duties, is not only not looked upon with suspicion by his owner, but is encouraged by him. He must feel that his master regards his scientific studies and attainments not as unfitting him for command, and full confidence in the management of the important interests entrusted to him, but as absolutely rendering him more trustworthy, on the principle enunciated by a well-known member of the mercantile marine service, that "a man with a hobby is always safer, both at sea and on shore, than a thoroughly idle man."

My object, therefore, in bringing this subject before this section of the British Association, is to endeavour to point out where the difficulty lies, in order that, that point being clearly understood, this influential and important body may by some means be brought to act in conjunction with shipowners and others connected with shipping, of which interest Liverpool and Manchester form the active centre. And I trust that the matter will not end with the reading of this brief paper, but that a committee may be formed under the auspices of this Association, which shall confer with some body of shipowners as to the best means of carrying out this most important object, and of opening up this wide and fertile field of scientific research.

I need scarcely dwell upon the manifold advantages which would necessarily accrue were this scheme elaborated and brought with care and judgment into a working condition. Many will at once occur to every thinking mind, and others will unfold themselves in the process of time. Museums, such as those of Liverpool and Manchester, should not lack specimens in any department, with such a staff of industrious and intelligent collectors constantly bringing home contributions.

But by no means the least important result would be the elevation of the mercantile marine service, as a body, and their emancipation from the evils too often looked upon as inseparable from their habits of life, by giving them a rational object on which they may expend their energies, when not called upon by pressing duties on board ship. Having few of the resources which those possess whose life is passed on shore, and herding together as they do for months at a time, with scarce any of the amenities of life, it cannot be otherwise than that their minds should degenerate to a dull blank, or even to a worse condition; and it too often happens that in this respect the captain is in no degree superior to his crew.

[I purpose reprinting the remainder of this interesting paper when I can find space.—*E. Newman.*]

Notes on Nests.—I have taken five nests of the missel thrush this spring, four of which I pulled to pieces, and they each contained a thin lining of mud, besides being firmly cemented to the forks of the trees on which they rested. In the truly valuable little work on 'Birdsnesting' I think a slight mistake is made respecting the number of eggs laid by the starling; it there states "Eggs 4." Now I have never found so few eggs as four in any nest in which the full complement were laid; they generally range from five to seven, in fact I know of several nests at the present time which contain either five, six or seven young birds. Perhaps the following notes may not be uninteresting. On the 10th of May, whilst staying in the neighbourhood of Weymouth, I obtained two nests of the chough, taken from a high cliff called "Whitenose." One nest contained five eggs, the other four; they were all nearly ready to hatch. On the 10th of June I had the good fortune to meet with a nest of the stone curlew, an extremely rare bird in this neighbourhood: it contained two eggs partly incubated. The eggs were laid in a slight hollow made by the bird on a bare fallow field, and the nest had no lining whatever. In the spring of 1861 a robin built its nest under the thatched eaves of the garden summer-house; this year a pied wagtail repaired the nest and deposited five eggs therein, which I took to add to my collection. Nothing daunted the bird again laid four others in the same nest: these I intended to have left, but unfortunately they were destroyed, probably by a mouse.—*Henry Reaks; Thraxton, near Andover, June* 24, 1862.

The Nightingale's Nest.—Dear Sir: Allow me to make a few remarks upon a communication from the Rev. A. C. Smith (Zool. 8027), with regard to the nidification of the nightingale. It is the custom to laud our great poet to the skies, and he is perhaps deserving of it all; he may have been an ornithologist for anything we know to the contrary, but it is a stretch of ingenuity to quote his poetry as evidence that he knew that some blundering builder of a nightingale had so misplaced its nest. There is some difference, too, betweeen sitting against or upon a thorn. Living in the North of England during my chief birdnesting days, I have had but few opportunities of examining nests of the nightingale, but I do not at all doubt the correctness of the instances of ornithological stupidity which Mr. Smith has mentioned, and if he will again do me the favour to refer to the 'Eggs of British Birds,' he will there find that I have mentioned two similar instances with regard to the hedgesparrow. These can only be accounted for by supposing either that the eggs were ready before the nest, or that the birds were simpletons. I have seen many such unfinished nests. As a proof that birds are not always gifted with much intelligence I quote the last anecdote which I have heard, although I could give you many. Mr. John Hancock tells me that a friend of his found the nest of a wood-owl by observing a broken egg at the base of the tree in which it was placed, and ascertained upon examination that the bird was daily dropping one through a hole in the nest. I have this summer been surprised at the number of perfect eggs which I have found dropped upon my lawn, chiefly those of the starling. This opportunity leads me to send you a memorandum which was made last year, and thrown aside because refused a place in that learned publication by the editor of the 'Ibis.' Perhaps your courtesy will afford it a place in the 'Zoologist.'—Yours very truly, *W. C. Hewitson.*

Note on the Nightingale.—One morning a nightingale flew against my window and fell to the ground stunned, and for a long time lay gasping as if in death. I feared that its life was passing rapidly away, and felt much grieved when I thought that I should hear its sweet song no more. I took it in my hand, but its legs were paralyzed and the feet had lost their tension. After a long and doubtful struggle for life the use of its legs returned to it; it grasped my finger, looked up into my face with its large and beautiful eyes, seemed as if just awakening from a dream, and sung a few soft sweet notes: they were low and plaintive, and reminded me of the notes which sometimes escape from an instrument when the hands have ceased to play. It had no wish to leave me. I transferred it to the branch of a tree, where it remained for some time, but on my again attempting to take it on my finger it flew away.—*W. C. Hewitson.*

Proceedings of Societies.

ENTOMOLOGICAL SOCIETY.

June 2, 1862.—FREDERICK SMITH, Esq., President, in the chair.

Election of Members of Council.

The Secretary read the notice summoning the members to a Special General Meeting, for the purpose of electing a member of Council in the place of Dr. Knaggs, resigned; and the Meeting having been made a Special General Meeting, the President appointed Messrs. Baly and Wilkinson to act as Scrutineers; a ballot was taken, and H. T. Stainton, Esq., was unanimously elected a member of the Council of the Society.

Election of Members.

The Meeting having resumed as an Ordinary Meeting, W. H. L. Walcott, Esq., and David Sharp, Esq., were severally balloted for and elected Members of the Society.

Donations.

The following donations were announced, and thanks ordered to be given to the donors: —'Memoir of the Rev. John Stevens Henslow, M.A., F.L.S, F.G.S., F.C.P.S., late Rector of Hitcham, and Professor of Botany in the University of Cambridge,' by the Rev. Leonard Jenyns, M.A., F.L.S., F.G.S., F.C.P.S.; presented by the Author. 'Schriften der Königlichen Physikalisch-ökonomischen Gesellschaft zu Königsberg, Zweiter Jahrgang, 1861, Erste und Zweite Abtheilung'; by the Society. 'The Canadian Naturalist and Geologist, and Proceedings of the Natural-History Society of Montreal, conducted by a Committee of the Natural-History Society,' Vol. vii. No. 2; by the Society. 'The Zoologist' for June; by the Editor. 'The Journal of the Society of Arts' for May; by the Society. 'The London Review' for May; by the Editor. 'Journal of the Proceedings of the Linnean Society,' Vol. vi. No. 23; by the Society.

The addition to the Library, by purchase, of Jacquelin Du Val's 'Genera des Coléoptères d'Europe' was also announced.

Exhibitions, &c.

The Secretary read a letter addressed to him by Charles Barton, Esq., of Rope Hill, Lymington, requesting an explanation of a phenomenon he had observed in his garden on the 21st ult.: the leaves of all the shrubs and plants were covered with dust, which, with a half-inch object-glass, was found to consist of globules of one size, like small pearl-barley; with a quarter-inch object-glass these globules resembled the ova of fish, but were not perfectly globular, being indented on one side. Some laurel leaves, having some of the globular masses upon them, were exhibited to the meeting. It was suggested by Mr. Saunders that most probably the dust consisted of the pollen of some coniferous tree.

Prof. Westwood exhibited a dry collodion plate, on the coating of which—consisting of gelatine, collodion, nitrate of silver and tannin — considerable devastation had been committed by Blatta orientalis; and in reference thereto read the following extract from a letter addressed by W. G. Ormerod, Esq., of Chagford, to Mr. Spence Bate:—"The enclosed may possibly interest you as an entomologist, one of the 'ologies' that I have not dabbled with. I find that the black beetles are particularly fond of dry collodion plates, in the progress from wet to dry, when reared in a box in a dark cupboard. Several had suffered before I found out the cause. At last I caught one black beetle in the act. The animal seems to have been particularly fond of the thick collodion; by the way, he has cleared it off at the corner: the alternate action of the mandibles seems very clear."

Prof. Westwood remarked that this was not the first instance he had known of insects exhibiting a partiality for chemical substances, and mentioned the case of a species of Ptinus which was found at Knightsbridge, in great numbers, congregated in a bottle full of chemical solution.

Mr. Waterhouse exhibited specimens of Seraptia nigricans, *Ste.*, bred from rotten oak wood, in the neighbourhood of London; and of Trichonyx sulcicollis, one of the Pselaphidæ, taken also in the vicinity of London, by Messrs. Douglas and Scott.

The President exhibited six specimens of Pentarthrum Huttoni, *Woll.*, taken by Mr. Reading in the Plymouth district; and read the following extract from a letter received from Mr. Reading:—

"The history of the enclosed specimens is simply this:—I purchased some material used in gardening operations, amongst which was a cask of light construction, made of birch with hazel hoops, in the stems and hoops of which this insect was found. The cask had been stowed away in an out-house, with various kinds of wood used for burning. There were but four examples of this insect known to Science previous to the capture of these, and they, too, were taken in Devonshire; so that this insect is purely Devonian. It was described by Mr. Wollaston in the 'Annals and Magazine of Natural History' for August, 1854, to which I beg to refer all those who feel interested in the history of the species. After you have shown the specimens to the Meeting, will you be pleased to present a pair of them to the Entomological Society, also a pair to the British Museum, and a pair to the collection of the Entomological Club."

Mr. W. F. Kirby exhibited a specimen (the second) of Brahmæa Hearseyi, *White.* Mr. White exhibited it at the Zoological Society a few months ago, and said that it confirmed the characters by which he had separated the species from the Certhia, *Fab.*: it was found in a collection of insects received direct from India.

Mr. Kirby also exhibited a magnificent female specimen of Parnassius Clarius, a rare, species inhabiting various chains of mountains in Asiatic Russia, and coming nearer to P. Nordmanni than to any other European species.

Prof. Westwood said that at the close of the Exhibition of 1851 he had drawn up and read a report of the insect products exhibited: he had not yet had an opportunity of going fully through the present International Exhibition, but he thought it might be agreeable to the members of the Society if he pointed out what of an entomological nature had already attracted his attention. Of the collections from foreign countries, he might mention those from Canada and South Australia, the latter, however, not very good; and a collection of insects of all orders from Guiana, the most remarkable of which was a species of Paussus, probably a new genus, but unfortunately the antennæ were broken, so that it was impossible to say whether they were 10- or 8-jointed. Of the exhibitions of an economical kind, the best was one in the North Gallery of the French compartment, which had been formed by monks for educational purposes; there were also among the French exhibitions some magnificent Lepidoptera, including the silk-producing species of Bombyx, of which Mr. Moore had exhibited the cocoon at the last Meeting of the Society. The silk products from India were very well and fully represented. Among the South-Australian collection was a magnificent Astacus in spirits, as large as a good-sized lobster, and with its body covered with spines. Prof. Westwood thought that the bee products were not so well represented as in 1851.

Mr. W. W. Saunders, in addition to the objects of attraction mentioned by Prof. Westwood, directed the attention of members to the Brazilian collection, and also to the exhibition of the ravages of a species of Botys, which was peculiarly destructive to hemp.

The President exhibited specimens and magnified drawings of Myrmecocystus mexicanus, and read the following notes thereon:—

"I have this evening an opportunity of exhibiting specimens of a very remarkable ant from Mexico—the Myrmecocystus mexicanus of Wesmael, described in the fifth volume of 'Bulletins de l'Academie de Bruxelles,' 1838. The workers of this singular ant are of two very distinct forms, one being of the ordinary description, like our wood ant (*Formica rufa*), active, and performing the necessary duties in the formicarium; the other, which is the larger worker, is inactive, and does not quit the nest, their sole purpose apparently being to elaborate a kind of honey, which they are said to discharge into prepared receptacles; this constitutes the food of the entire population of the community. In the honey-secreting workers the abdomen is distended into a large globose bladder-like form, much too large for the creatures to drag about with them; the head, thorax, and basal segment of the abdomen are extremely like the Formica sanguinea. The male and female I have not seen, but they are described as resembling the same sexes of most of our common European ants. The specimens that I now exhibit were sent to me by Dr. Pagenstecher, of Heidelberg: from him I learned that the ants—that is, the honey-secreting individuals—are collected and regularly sold in the markets in Mexico, and that from the honey which is expressed from them a very agreeable liquor or drink is manufactured. In Mexico the ant is called Hormigas miêleras, or moihileras, that is, honey ants, or pouched ants.

"It will perhaps be in the recollection of members of the Society that I described, in the second volume of the 'Proceedings of the Linnean Society,' a species of ant which I named Crematogaster inflatus, from the fact of its having a remarkable bladder-like receptacle on the hinder part of the thorax: this receptacle is furnished with a minute aperture at the posterior part on each side; on opening one of these bladders it was found to contain a crystallized mass, which to the taste resembled sugar. This ant was from Singapore and Borneo. I consider this a more remarkable insect than the Myrmecocystus mexicanus. Many insects are known to elaborate honey or sweet fluids, the Aphides for instance; but in all previous cases the abdomen has formed the receptacle, whereas in Crematogaster inflatus it is situated on the metathorax."

The Secretary read, on behalf of Mr. Newman, the following paper, entitled

Varieties versus *Hybrids.*

"At the March Meeting of the Society, Mr. Fereday read a paper of extreme interest, on variation in the coloration or ornamentation of certain Lepidoptera which he exhibited, and argued that the discrepancy between the specimens in question, and the insect in its normal or typical phase, probably resulted from the male and female being referable to different species, although we all know that it is generally assumed that the male and female progenitors of a moth are invariably of the same species. To such an assumption Mr. Fereday objects that 'we ought not to accept as a fact anything which *may be*, but *is not*, established by direct and conclusive evidence.' Without attempting to deny the *primâ facie* value of this axiom, I may perhaps be allowed to state that we accept, on theoretical grounds only, many conclusions that are not susceptible of proof by direct evidence; and that we shall continue to do so as long as such minds as those of Galileo, Newton and Cuvier are from time to time permitted to enlighten us; indeed, unless we theorize on very slender knowledge, we shall remain in utter ignorance of much that now passes for sound philosophy. Mr. Fereday proceeds further to support his idea of hybridism by objecting to our forming any conclusions about parentage without positive evidence. These are his expressions: — 'To prove that the so-called "varieties" are varieties and not hybrids, I contend that it is not sufficient to prove their descent from a particular female, but that there must be evidence of the male parent having been an insect of a precisely similar type to that of the female parent; because, if the male varied from the female, the very question upon which I raise an issue is again involved.' I do not object that Mr. Fereday should lay the *onus probandi* on those who adopt an opposite theory; but if this be fair and logical, then a moment's reflection will convince any one that the converse is equally fair and logical, and that the *onus probandi* may also be laid fairly and logically on the advocates of the hybrid hypothesis: for the sake of example:—'To prove that the so-called "hybrids" are hybrids, I contend that it is not sufficient to prove their descent from a particular female, but there must be evidence of the male parent having been an insect of a species totally distinct from the female parent, &c.' I will further illustrate this: let Mr. Fereday fix on an abnormal specimen of Arctia caja, Abraxas grossulariata, or any other, I care not what species, so that it be liable to great variation, and its maternal parentage known, — say a drab caja or a white grossulariata,—and then let him find a papa for it in some other species; it matters not whether totally discordant or closely allied; thus were he to discover that one of the quakers, as Moses Harris prettily called the Tæniocampæ, had been too familiar with the lady tiger, more properly tigress, and that her tell-tale little ones had thus been suffused with drab, or had he detected a Pontia Rapæ male, or even a Scoria dealbata male, paying delicate attentions to Abraxas grossulariata female, we could perhaps believe that those nuptially-adorned specimens of the last-named insect resulted from illicit intercourse; but surely we who believe in varieties, and who call them varieties, are rather hardly treated when we are told that *we* must prove that these — what shall I call them? — these eccentricities of genius do *not* exist. I wish Mr. Fereday to show that they *do* exist. I am quite sure that if I thought so I should try to prove it, and not lay on the shoulders of another the onus of proving a negative. In our domestic animals (the horse, ox, rabbit, guinea pig, dog, cat, &c.) the coloration or ornamentation varies quite as much as in the tiger or currant moth, and exactly in the same way, that is, in the excess or absence of some particular colour, as black, yellow or white; yet we suspect no hybridism, for in every instance the male parent is known to be specifically the same as the female. Indeed, varieties are scarcely subject to our control at all; for, whatever Mr. Gregson, who may be called the victuals-doctor, may say to the contrary, I don't think he could produce a stock of red Herefordshire cattle out of black Highland stots, were he to feed them for generations on carrots; neither can I believe that the hybrid theory will ever be established by actual experiment. Those who see one tortoiseshell in a litter of tabbies, or one self-coloured example reared from a batch of tiger's eggs, need not, as I conceive, trouble themselves to detect improprieties on the part of the mother, or assume the consumption of unusual or unwholesome food by either parent or offspring. Varieties will occur; and should we seek an explanation of them, we must investigate the subject with much greater care than we have hitherto done."

Mr. Waterhouse read a paper entitled "Observations upon the Nomenclature adopted in the recently-published 'Catalogue of British Coleoptera,' having reference more especially to remarks contained in Dr. Schaum's paper 'On the Restoration of Obsolete Names in Entomology.'"

Mr. W. F. Kirby read a paper "On the Specific Distinctions of Colias Boothii and Hecla," and a description of Cœnonympha Mandane, a new species, from Polish Ukraine.

"During the extensive examination I have had to make lately of the collection of Rhopalocera in the British Museum, I have met with two specimens of a Cœnonympha which appears to me to be new. I therefore describe it under the name of

CŒNONYMPHA MANDANE, *n. sp.*

Alis anticis fulvis obscurioribus; posticis fuscescentibus, subtus lineâ argenteâ; fimbriis omnibus aurantiacis.

This species expands an inch and three or four lines. Fore wings dull fulvous or tawny, shading off into brown towards the hind margins; hind wings brown, with a few small marginal orange eyes in one specimen. A narrow orange line close to the fringe on all the wings. Fringes ashy gray. Under side of the fore wings uniform dull fulvous; hind margin ashy gray, the orange line fading into it towards the tip. Under side of the hind wings brown, greenish at the base; the orange fringe edged internally by a silvery line, within which are three or four small eyes with silvery pupils. In the centre of the wing the pale band usual in the genus Cœnonympha is represented by two large spots. Nearer the base, on the costa, is another small eye with a silvery pupil.

Habitat, Polish Ukraine."

Mr. W. Wilson Saunders said the President and Council of the Society had accepted an invitation to spend the day with him in the neighbourhood of Reigate on the 8th of July, and invited every member and subscriber to meet the President and Council on that occasion.

A new Part of the 'Transactions,' Vol. i., 3rd series, Part II., was on the table. —*J. W. D.*

(Advertisement.)

THE ENTOMOLOGIST'S WEEKLY INTELLIGENCER.

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To the Readers of the 'Zoologist.'

Several attempts are being made to renew this publication; as there seems to be some doubt if they will succeed, I should suggest that the loss of the 'Intelligencer' might be made up in this way:—Let the Editor of the 'Zoologist' add a monthly supplement of some twenty pages at least, with a small increase to the cost. Would not this answer the purpose better than, perhaps, the vain effort going on at present?

From my knowledge of the Editor of the 'Zoologist' (solely derived from his writings), I believe he is of so unassuming and independent a disposition that nothing would induce him to push himself forward on such an occasion. I am convinced that no man living has his heart and soul in entomological researches more thoroughly than my namesake, Mr. E. Newman, and few, if any other, can be found more capable of conducting that part of Natural History which embellished occasionally the pages of the 'Entomologist's Weekly Intelligencer.' I therefore strongly recommend my friends in Cheshire to consider my suggestion, and my opinion is further corroborated by one or two friends whose studies have always been led in the direction I allude to.

H. W. Newman,
(Late Lieut.-Colonel Commandant, Royal South Gloucester Militia).
Hillside, Cheltenham, June 3, 1862.

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